

REMARKS


The present Amendment is intended to improve the form of the Specification. The citation of the Zimmerman et al. article that appears at the bottom of Page 1 has been corrected.

A Supplemental Information Disclosure Statement is being filed herewith.

The examination and allowance of the Application respectfully are requested.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: 
Benton S. Duffett, Jr.
Registration No. 22,030

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620

Filed: June 13, 2002

Attachment to Second Preliminary Amendment

Marked-Up of Amendment to Specification Beginning at Page 1, Line 19

When a new genetic code is transferred to a specially selected host cell, the technique is referred to as transformation or transfection. There is no general method to be used for all types of cells, but a technique is available for each cell type and purpose. Moreover it is not possible to transform all cell types using the techniques that are currently available. In 1970, Mandel and Higa (*J. Mol. Bio.* 53: 159-162) reported that *E.coli* cells which had been pre-treated with CaCl_2 could be made to take up foreign DNA when subjected to a temperature shock. After that the method has been continuously developed, (see e.g. US international patent application [US97/01788] PCT/US97/01788). By exposing cells, during a fraction of a second, to an electric pulse of high voltage, pores in cell membranes open, referred to as electroporation (Zimmerman et al. *J. Membr. Biol.* [67: 165-82 (1983)] 84, 269-285 (1985)), which is frequently used as transformation technique. Bacteria, yeast and in some cases also mammalian cells and plant cells can, in specific conditions, be transformed by means of electroporation. Also in this case, a continuous development of the technique is in progress (see U.S. international patent applications [US97/16721, US98/16042] PCT/US97/16721 and PCT/US98/16042). In the two methods described above, the cell envelope is opened sufficiently long for the DNA molecule to enter the cell. The third and last developed method for transformation is so-called lipofection (Old and Primrose, in *Principles of Gene Manipulation: An Introduction to Gene Manipulation*, Blackwell Science (1995)) where the foreign DNA is enclosed in/binds to a cationic liposome which fuses with the outer membrane of the target

Attachment to Second Preliminary Amendment

Marked-Up of Amendment to Specification Beginning at Page 1, Line 19

cell. There is one more commercial technique for transformation of plant cells, where a plant part selected for the purpose is bombarded with small gold grains which are prepared with the foreign gene (Boynton J.E. et. Science 240, 1534-1538, 1988). Such gene transfer has been developed for transformation of other tissues, such as bacteria, fungi, insect and mammalian cells (Johnston S.A. Nature 346, 776-777, 1990).